# Shorebird feeding ecology: implications for conservation and management

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Western Sandpipers are long-distance migrants that breed in Alaska and winter between southern British Columbia and Peru. Males predominate over the more northerly overwintering range and have relatively shorter bills than females. Highly plastic foraging behaviours are displayed within the species but sex-related differences in feeding mode are apparent and may result in sex-related differences in diet. Both sexes use surface pecking techniques to feed on epifaunal food, including macro- and meio-faunal invertebrates, but females exhibit a greater frequency of probing for infaunal prey. Unique features of the tongues and associated observations indicate that Western Sandpiper deposit feed on surficial biofilm material, as opposed to incidentally imbibing such material while targeting epifaunal invertebrates, and, thus, exhibit an hitherto unknown feeding mode for birds. The implications of biofilm grazing and sex-related dietary specializations are discussed in terms of differential susceptibility of males and females to contaminant loading as well as potential implications for western sandpiper non-breeding distributions. We present data addressing the hypothesis that latitudinal patterns in the availability of surface as compared to subsurface food types may underlie the non-breeding distribution of males and females and discuss the management implications of such a phenomenon.